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Naoto Toyooka

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EXAMINER

LEE, JAEYUN

ART UNIT

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4128

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,913	Applicant(s) TOYOOKA ET AL.	
	Examiner JAEYUN LEE	Art Unit 4128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/28/2005 and 12/19/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Summary

1. This is the initial Office Action based on the TOYOOKA et al. application filed on March 12, 2007.
2. Claims 1-15 are currently pending and have been fully considered.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

4. Figures 24A and 24B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities: reference character "201" has been referred to both movable plate (page 18, line 3) and film feeder (page 18, lines 4, 12, 13, and 17). Appropriate correction is required.

Claim Objections

6. Claim1 is objected to because of the following informalities: a term “clamping force-receiving portion” is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-9 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over TAKAHASHI et al. (US 5,753,275) in view of ANDRAS (US 3717428).

TAKAHASHI et al. expressly teach all the structural limitations of a mold in claim 1 in combination with ANDRAS but do not teach the decorating film disposed in between the molds. However, limitations drawn to decorating film are drawn to the intended use of the claimed mold, and are therefore given little patentable weight. Additionally, a mold of TAKAHASHI et al. is inherently capable of carrying the

decorating film in the gap between the molds when the molds are closed and is therefore inherently capable of performing the claimed intended use.

With respect to claim 1, TAKAHASHI et al. teach an apparatus for guiding and aligning fixed side and movable side disk cavity plates of disk injection molding dies of injection molding device (abstract) comprising: a stationary-side mold (a fixed side metal die assembly) (figure 5, item 100); and a movable-side mold (a movable side metal die assembly) (figure 5, item 200), at least one of the molds having: a cavity-forming block (a fixed side disk cavity plate (figure 5, item 2); a movable side disk cavity plate (figure 5, item 9)) including a molding-use cavity (figure 5, item 11); and a dieset (a fixed side mounting plate-figure 5, item 1; a movable side mounting plate-figure 5, item 8) for mounting the cavity-forming block (a fixed side disk cavity plate (figure 5, item 2); a movable side disk cavity plate (figure 5, item 9)) (column 1, lines 39-40 and 51-52); wherein the dieset (a fixed side mounting plate (figure 5, item 1); a movable side mounting plate (figure 5, item 8)) for mounting the cavity-forming block (column 1, lines 39-40 and 51-52) comprises: a mounting face (a top surface of mounting plates (figure 5, items 8 and 1) where the disk cavity plates (figure 5, items 9 and 2) are mounted on) which are positioned on a face opposed to the other mold which could be used so as to overlap with a passing region of a decorating film and which are formed smoothly; and a mold clamping force-receiving portion (a female tapered surface (figure 5, item 5) of a fixed side cylindrical guide ring (figure 5, item 4); a male tapered surface (figure 5, item 13) of a movable side cylindrical guide ring (figure 5, item 12)) could be provided outside the passing region of a decorating film and the mounting face in a way almost

symmetrical with respect to a center line of the one mold along a passing direction of a decorating film.

Although, TAKAHASHI et al. teach a disk cavity plate (cavity-forming block) is secured to a mounting plate (dieset) (column 1, lines 39-40 and 51-52), TAKAHASHI et al. do not expressly teach how the disk cavity plate is secured to a mounting plate. TAKAHASHI et al. fail to teach either one of the dieset and the cavity-forming block has an engagement protruding portion while the other has an engagement recess portion which engages with the engagement protruding portion, the engagement protruding portion is engaged with the engagement recess portion so that the cavity-forming block is positioned at the mounting face of the dieset and the cavity-forming block is mounted on the dieset.

ANDRAS teaches an adapter plate system and corresponding mold bases for use with injection molding assemblies to secure the mold bases to varying press platens comprising: dieset (adapter plate) (figure 1, item 61; figure 5, item 61) and the cavity-forming block (cavity plate) (figure 1, item 67; figure 6, item 67) has an engagement protruding portion (dowel pins) (figure 5, items 73 and 75; figure 6, items 73 and 75) while the other has an engagement recess portion (apertures) (figure 6, items 76 and 78) which engages with the engagement protruding portion, the engagement protruding portion is engaged with the engagement recess portion so that the cavity-forming block is positioned at the mounting face of the dieset and the cavity-forming block is mounted on the dieset (column 3, lines 60-65 and column 4, line 1).

Therefore, it would have been obvious at the time of Applicant's invention to one of ordinary skill in the art to configure the dieset and the cavity-forming block fixing means of TAKAHASHI et al. with the dowel pins (protruding portion) of adapter plate (dieset) and apertures (recess portion) of cavity plate (cavity-forming block) as taught by ANDRAS to assure the proper alignment of the cavity plate to the adapter plate and thus the mold halves cannot be rotated 180 degree out of alignment with each other so that cavities will always match as taught by ANDRAS (column 3, lines 60-61 and column 4, lines 1-3).

With respect to claims 2-3, ANDRAS also teaches an adapter plate system and corresponding mold bases for use with injection molding assemblies to secure the mold bases to varying press platens wherein one of engagement protruding portion (dowel pins) (figure 5, items 73 and 75; figure 6, items 73 and 75) and the engagement recess portion (apertures) (figure 6, items 76 and 78) is provided on the mounting face (a top surface of adapter plate (figure 5, item 61; figure 6, item 61) where the cavity plate (figure 6, items 67) are mounted on) while the other is provided on a back face of the cavity forming side face of the cavity-forming block (back surface of the cavity plate (figure 6, item 67) where the top surface of adapter plate (figure 6, item 61) is contacted with), on the mounting face or the back face side, the recess portion (apertures) (figure 6, items 76 and 78) is formed into a long hold which is long in radiating direction from an injection port (aperture) (figure 5, item 89) provided on the dieset (adapter plate) (figure 5, item 61) for injecting the molten resin into the cavity or from a position or a corresponding position at which a sprue of the cavity forming block for feeding the

molten resin from the injection port to the cavity is provided (column 4, lines 10-16), and a longitudinal inner wall of the engagement recess portion (apertures) (figure 6, items 76 and 78) is structured to be in contact with the engagement protruding portion (dowel pins) (figure 6, items 73 and 75) when the cavity-forming block (cavity plate) (figure 6, item 67) is mounted on the mount (adapter plate) (figure 6, item 61).

ANDRAS further teaches an adapter plate system and corresponding mold bases for use with injection molding assemblies to secure the mold bases to varying press platens wherein the engagement protruding portion (dowel pins) (figure 6, items 73 and 75) is provided on the mounting face (a top surface of adapter plate (figure 6, item 61) where the cavity plate (figure 6, items 67) are mounted on), while the recess portion (apertures) (figure 6, items 76 and 78) is provided on the back face side (back surface of the cavity plate (figure 6, item 67) where the top surface of adapter plate (figure 6, item 61) is contacted with).

With respect to claims 4-5 TAKAHASHI et al. teach an apparatus for guiding and aligning fixed side and movable side disk cavity plates of disk injection molding dies of injection molding device comprising: a clearance (gap made for optical disk substrate (figure 5, item 11)) which could be inside the passing region of a decorating film for interposing a decorating film therein in a state that both the molds are closed; Wherein the clearance (space made for optical disk substrate (figure 5, item 11)) is formed by setting a surface of the cavity forming side on the cavity-forming block (surface of fixed side cavity plate (figure 5, item 2) of the one mold (a fixed side metal die assembly) (figure 5, item 100) to be lower than an opposed face of the clamping force-receiving

portions (a male tapered surface (figure 5, item 13) of a movable side cylindrical guide ring (figure 5, item 12)) opposed to the other mold when viewed from the mounting face.

With respect to claims 6 and 14, TAKAHASHI et al. teach an apparatus for guiding and aligning fixed side and movable side disk cavity plates of disk injection molding dies of injection molding device wherein the clearance (space made for optical disk substrate (figure 5, item 11)) is dimensioned so that clamping force of both the molds is not exerted on the region within the mold cavity.

With respect to claims 7 and 15, TAKAHASHI et al. do not expressly teach an apparatus for guiding and aligning fixed side and movable side disk cavity plates of disk injection molding dies of injection molding device wherein the clearance is dimensioned to be almost identical to a thickness of the decoration film. However, one of ordinary skill in the art could have used both molds (fixed side and movable side molds) with cylindrical guide rings (fixed side and movable side) (clamping force-receiving portion) which creates the claimed clearance in between the molds when molds are closed so that clamping force of both molds is not exerted on the region within the mold cavity.

With respect to claim 8, TAKAHASHI et al. teach an apparatus for guiding and aligning fixed side and movable side disk cavity plates of disk injection molding dies of injection molding device wherein the mounting face (a top surface of mounting plates (figure 5, items 8 and 1) where the disk cavity plates (figure 5, items 9 and 2) are mounted on)) is provided on the face of the dieset (a fixed side mounting plate (figure 5, item 1); a movable side mounting plate (figure 5, item 8)) opposed to the other mold and is also provided on a plane identical to a smoothing face (remaining side top surfaces of

the mounting plate (figure 5, items 8 and 1) when cavity plates (figure 5, items 9 and 2) are mounted on) smoothed together with the mounting face.

With respect to claims 9 and 13, TAKAHASHI et al. also teach an apparatus for guiding and aligning fixed side and movable side disk cavity plates of disk injection molding dies of injection molding device wherein the clamping force-receiving portion (a female tapered surface (figure 5, item 5) of a fixed side cylindrical guide ring (figure 5, item 4); a male tapered surface (figure 5, item 13) of a movable side cylindrical guide ring (figure 5, item 12)) is formed integrally with the dieset (a fixed side mounting plate (figure 5, item 1); a movable side mounting plate (figure 5, item 8)); wherein the clamping force-receiving portion is provided away from the cavity-forming block (a fixed side disk cavity plate (figure 5, item 2); a movable side disk cavity plate (figure 5, item 9)).

10. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over TAKAHASHI et al. (US 5,753,275) and ANDRAS (US 3,717,428) in view of ATAKE (US 5,851,558).

With respect to claim 10, TAKAHASHI et al. and ANDRAS teach all structural limitations of claim 1 as discussed in the 35 U.S.C. 103(a) rejection above. However, TAKAHASHI et al. and ANDRAS fail to teach a clamp in the movable-side mold for retaining the decorating film in a state that a design pattern of the decorating film is positioned inside the cavity, the clamp being supported by the cavity-forming block.

ATAKE teaches a foil-decorating injection molding machine capable of producing a molding decorated by patterns and characters by simultaneously forming the molding

by injection molding and attaching a decorative sheet to the molding comprising a clamp (a sheet holding member) (figure 2, item 32; figure 4, item 32) in the movable-side mold (female mold) (figure 2, item 25; figure 4, item 25) for retaining the decorating film (decorative sheet) (figure 2, item S) in a state that a design pattern of the decorating film (decorative sheet) (figure 2, item S) is positioned inside the cavity (column 2, lines 25-42), the clamp being supported by the cavity-forming block (female mold (figure 4, item 25) having a recess for forming a cavity (figure 4, item 26)) (column 2, lines 4-10).

Therefore, it would have been obvious at the time of Applicant's invention to one of ordinary skill in the art to configure the movable-side cavity plate of TAKAHASHI et al. to have a sheet holding member (clamp) supported by a female mold as taught by ATAKE for the purpose of providing a transfer decorative sheet to be held fixedly in place on the parting surface of the female mold during a molten resin is injected into the cavity as taught by ATAKE (column 8, lines 21-23).

With respect to claim 11, TAKAHASHI et al. and ANDRAS teach all structural limitations of claim 1 as discussed in the 35 U.S.C. 103(a) rejection above. However, TAKAHASHI et al. and ANDRAS fail to teach a clamp in the movable-side mold for retaining the decorating film in a state that a design pattern of the decorating film is positioned inside the cavity, the clamp being supported by the clamp force-receiving portion.

ATAKE teaches a foil-decorating injection molding machine capable of producing a molding decorated by patterns and characters by simultaneously forming the molding by injection molding and attaching a decorative sheet to the molding comprising a clamp

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(a sheet holding member) (figure 2, item 32; figure 4, item 32) in the movable-side mold (female mold) (figure 2, item 25; figure 4, item 25) for retaining the decorating film (decorative sheet) (figure 2, item S) in a state that a design pattern of the decorating film (decorative sheet) (figure 2, item S) is positioned inside the cavity (column 2, lines 25-42), the clamp being supported by the cavity-forming block (female mold (figure 4, item 25) having a recess for forming a cavity (figure 4, item 26)) (column 2, lines 4-10).

Although ATAKE fails to teach a sheet holding member (clamp) not being supported by the clamp force-receiving portion but by the cavity-forming block, it would be obvious to one of ordinary skill in the art to reposition a sheet holding member (clamp) supported by female mold (cavity-forming block) of ATAKE to a movable-side cylindrical guide ring (figure 5, item 12) (clamp-force receiving portion) of TAKAHASHI et al. for the purpose of providing a transfer decorative sheet to be held fixedly in place on the parting surface of the female mold during a molten resin is injected into the cavity as taught by ATAKE (column 8, lines 21-23).

11. Claim 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over TAKAHASHI et al. (US 5,753,275) and ANDRAS (US 3,717,428) in view of LARSSON (US 5,516,470).

With respect to claim 12, TAKAHASHI et al. and ANDRAS teach all structural limitation of claim 1 as discussed in the 35 U.S.C. 103(a) rejection above. However, TAKAHASHI et al. and ANDRAS fail to teach a cavity-forming block has a coolant pipeline for cooling the molten resin injected into the cavity, the coolant pipeline being directly connected to a coolant feeder.

LARSSON teaches a method for tempering a injection molding tool (abstract) comprising: a cavity-forming block (molding part (figure 4, item 3 having cavity (figure 4, item 9)) has a coolant pipeline (coolant fluid being connected to the capillary tube (figure 4, item 6) for cooling (...cooling effect... ; ...coolant effect...)) (column 8, lines 34 and 42) the molten resin injected into the cavity (molten polymer is introduced into the molding cavity...injection molding machine) (column 8, lines 49-50), the coolant pipeline being directly connected to a coolant feeder (a container with coolant fluid being connected to the capillary tube (figure 4, item 6)) (column 8, lines 22-24).

Therefore, it would have been obvious at the time of Applicant's invention to one of ordinary skill in the art to configure the cavity plate (cavity-forming block) of TAKAHASHI et al. to contain a capillary tube running coolant fluid supplied by a coolant fluid container to provide cooling effect on product after molten polymer is introduced into the molding cavity as taught by LARSSON in order to decrease cycle time.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAEYUN LEE whose telephone number is (571)270-5114. The examiner can normally be reached on Monday thru Friday 8am to 5pm est..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barbara Gilliam can be reached on 571-272-1330. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Barbara L. Gilliam/
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Unit 4128

JL
12/11/2007